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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/197,184	11/20/1998	KOSEI TERADA	25484.000691	1001

7590 12/26/2001

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EXAMINER

HUYNH, CONG LAC T

ART UNIT	PAPER NUMBER
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2176

DATE MAILED: 12/26/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/197,184

Applicant(s)

TERADA ET AL.

Examiner

Cong-Lac Huynh

Art Unit

2176

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 1998.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-5, 7-8, 10-13, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gasper (US Pat No. 4,884,972, 12/5/89) in view of Yamada (US Pat

Art Unit: 2176

No. 5,657,415, 8/12/97, filed 12/28/94) and Stelovsky (US Pat No. 5,613,909, 3/25/97, filed 7/21/94).

Regarding independent claim 1, Gasper discloses:

- ☐ generating a *motion image of an object in matching with the progression of sound* (col 1, lines 5-20, the *motion image* of a character's body is *synchronized with the sound* corresponding to an act into constituent part of the character; col 3, lines 5-27, visual images of an animated character and associated sounds are *decomposed* into constituent parts to produce *fragmentary images* and sounds)
- ☐ sound control information and a synchronization signal in correspondence with the sound to be played (col 3, lines 15-22; col 11, lines 53-63)

Gasper does not disclose:

- ☐ setting motion parameters to determine movements of movable parts of the object and the music control information
- ☐ a synchronization signal in correspondent with the *music* to be played.

Yamada discloses:

- ☐ setting motion parameters for fragmentary movements of the parts of the body of a person (abstract, col 2, lines 21-29, 58-67; col 4, lines 27-48)

Stelovsky discloses:

- ☐ a synchronization signal in correspondent with the music to be played (col 1, lines 15-27, col 3, lines 43-51; col 8, lines 34-45)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined Stelovsky and Yamada into Gasper to obtain an animation system where each part of the motion images of an object is synchronized with the associated sound of music played. Since in Yamada, the motion parameters are setting for the movable parts of the character, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have applied Yamada to the animated visual features of a character synchronized with the audio in Gasper and Stelovsky to facilitate retrieving or reproducing the motion images using motion parameters.

Regarding claim 2, which is dependent on claim 1, Gasper discloses the preparing of frames of motion images correspondent to the pre-recorded audio (col 1, lines 21-35). Since the frame is a partial data of the motion image, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have realized that the frame data is equivalent to a data block.

Regarding claim 3, which is dependent on claim 1, Gasper discloses generating the key frames of the motion image in response to the synchronization signal according to the sound control information, and further generating a number of sub frames inserted between the successive key frames by interpolation to smoothen the motion image (col 1, lines 36-60, producing *intermediate* frames between *the beginning and the ending frames*... the intermediate frames are calculated using linear *interpolation*

Art Unit: 2176

techniques...generates intermediate frames to provide a smooth transition from one visual image to the next to produce smooth animation).

Regarding claim 4, which is dependent on claim 1, Gasper discloses generating the motion image of an object representing an instrument player and analyzing the audio control information to determine a rendition movement of the instrument player for controlling the motion image (col 2, lines 45-51, analyzing the audio signal to provide real time data to determine which visual images or images should be presented to the user).

Gasper does not disclose the music control information but discloses the audio signal instead. However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have applied Gasper since the music is merely a form of the sound.

Regarding claim 5, which is dependent on claim 1, Gasper does not disclose generating the motion image according to the motion parameters to determine the movement of the movable parts of the object with respect to the default positions of the movable parts, and resetting the motion image to revert the movable parts to the default positions in matching with the progression of the music.

Yamada discloses generating the motion image according to the motion parameters to determine the movement of the movable parts of the object with respect to the default

Art Unit: 2176

positions of the movable parts (col 2, lines 21-29, 33-36), and *reproducing* the motion image using the motion parameters (col 2, lines 37-50).

Stelovsky discloses the synchronization of *motion video* and *music* (col 1, lines 8-18; col 6, lines 3-10) and said synchronization can be applied to the animated cartoons (col 1, lines 54-57).

Gasper and Stelovsky do not disclose resetting the motion image to revert the movable parts to the default positions in matching with the progression of the music.

However, from their above features, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have recognized that by combining Yamada and Stelovsky and Gasper, a system of animating an object along a music can be formed. By utilizing the motion parameters with associated movements of the motion object, the motion images can be reproduced in any way, including a revert way, to be synchronized with the sound or music.

Regarding claim 7, which is dependent on claim 1, as mentioned in claim 1 above, Stelovsky discloses the synchronization of the motion video and the music. However, Stelovsky does not disclose specifying an instrument used to play the music.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have recognized that a music can be played by an instrument or a combination of some instruments.

Art Unit: 2176

Regarding claim 8, which is dependent on claim 1, Yamada discloses utilizing the motion parameters to control the motion image of the object (refer to claim 1).

Stelovsky discloses the synchronization of motion video and music (figure 4; col 2, lines 21-29, 58 to col 3, lines 1-4).

Yamada and Stelovsky do not disclose controlling the amplitude of the sound to further control the motion image such that the movement of each part determined by the motion parameter is scaled in association with the amplitude of the sound.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have recognized that the amplitude of the sound can be controlled by adjusting the volume of the sound. Since the movement of the part of the object is determined by a motion parameter, said movement is synchronized with the music, and the amplitude of the sound can be adjusted, these features suggest to synchronize the movement of the motion images with the sound in a way that the motion images are adjusted to match with the up and down of the sound. In other words, the motion images are scaled in association with the amplitude of the sound.

Claims 10-13 are for an apparatus of claims 1-4, and therefore are rejected under the same rationale.

Claims 18-21 are for a machine readable medium of claims 1-4, and therefore are rejected under the same rationale.

5. Claims 6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gasper, Yamada, and Stelovsky as applied to claim 1 above, and further in view of Suzuki et al. (US Pat No. 6,227,968 B1, 5/8/01, filed 7/21/99, priority 7/24/98).

Regarding claim 6, which is dependent on claim 1, Gasper, Yamada, and Stelovsky do not disclose that the synchronization signal is utilized to regulate a beat of music so that the motion image of the object is controlled in synchronization with the beat of the music.

Suzuki discloses the beat of music that is synchronized with the motion of a dance object.(figures 6A-B, 11; col 7, lines 25-50).

Since Suzuki provides a game apparatus for displaying a dancer, which is a motion object and the associated music, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined Suzuki into Gasper, Yamada, and Stelovsky to display the dancer object, which is a motion object, and the correspondent music on the system of Gasper-Yamada-Stelovsky in the same manner where the motion object and music is synchronized and the movements of the motion object is specified by the motion parameters.

Regarding claim 9, which is dependent on claim 1, as mentioned in claim 6, Suzuki discloses that the dancer object, which is a motion object, and the music are

Art Unit: 2176

synchronized (figures 6A-B). Yamada discloses the motion parameters correspondent to the movements of a motion object (col 2, lines 20-36).

6. Claims 14-15,17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky (US Pat No. 5,613,909, 3/25/97, filed 7/21/94) in view of Yamada (US Pat No. 5,657,415, 8/12/97, filed 12/28/94).

Regarding independent claim 14, Stelovsky discloses:

- ☐ sequentially providing performance data to perform the music and a timing signal to regulate progression of the music (col 1, lines 44-57, performance data is a prerecording multimedia consisting of at least motion video, sound and accompanying text, multimedia presentation is partitioned into time segments, data sequence is synchronized with the time segment; col 6, lines 29-34, 55-56, multimedia data are linked to the time segments)
- ☐ generating a sound in response to the timing signal and in accordance with the performance data to thereby perform the music (col 8, lines 34-45, the music video is played the segment in correspondence of the time segment)
- ☐ generating a motion image of the object to response to the timing signal to matching with the progression of the music (col 3, lines 26-42, 52-67, types of video tracks include motion video, animation...; types of audio tracks include speech, song, or music ...; multimedia presentation is segmented with respect to ...into time segments...; motion video, audio,,, can be associated with a

Art Unit: 2176

multimedia presentation and be synchronized with respect to the presentation's time or its segments)

- utilizing the performance data to *modify* the framework in association with the performed music (figure 11; col 10, lines 43-65, author can modify the framework by *adding* a segment, *deleting* a segment..., and linking a text section to a segment)

Stelovsky does not disclose provisionally providing motion parameters to design a movement of the object, and generating a motion image comprises utilizing the motion parameters to form a framework of the motion image.

Yamada discloses:

- providing motion parameters for the movements of a moving pictures (col 2, lines 21-29)
- utilizing the motion parameters to *form a framework* of the motion image (figure 1; col 4, lines 27-48, using motion parameters to *reproduce the moving picture*)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined Yamada into Stelovsky to facilitate in reproducing a motion object where the movement of the object is synchronized with the sound of the music by using the motion parameters for each movement of the motion object.

Regarding claim 15, which is dependent on claim 14, Stelovsky discloses:

- generating a sound in response to the timing signal and in accordance with the performance data to thereby perform the music (col 8, lines 34-45, the music video is played the segment in correspondence of the time segment)
- generating a motion image of the object to response to the timing signal to matching with the progression of the music (col 3, lines 26-42, 52-67, types of video tracks include motion video, animation...; types of audio tracks include speech, song, or music ...; multimedia presentation is segmented with respect to ...into time segments...; motion video, audio,, can be associated with a multimedia presentation and be synchronized with respect to the presentation's time or its segments)

Though Stelovsky does not mention the "block of performance data", it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have recognized that the block of performance data is equivalent to the multimedia segment in Stelovsky where the motion video segments, the time segments and the sound segments are generated to match with each other.

Regarding claim 17, which is dependent on claim 14, as mentioned in claim 14, Yamada discloses providing motion parameters for the movements of a moving pictures (col 2, lines 21-29) and using the motion parameters for reproducing the moving pictures (figure 1, col 4, lines 27-48).

Stelovsky discloses utilizing the performance data to *modify* the framework in association with *the performed music* (figure 11; col 10, lines 43-65, author can modify

Art Unit: 2176

the framework by *adding* a segment, *deleting* a segment..., and linking a text section to a segment).

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky and Yamada as applied to claim 14 above, and further in view of Gasper (US Pat No. 4,884,972, 12/5/89).

Regarding claim 16, which is dependent on claim 14, Stelovsky and Yamada do not disclose generating a variable number of sub frames inserted between the successive key frames by interpolation to smoothen the motion image.

Gasper discloses that feature (col 1, lines 36-60, producing *intermediate* frames between *the beginning and the ending frames...* the intermediate frames are calculated using linear *interpolation techniques...* generates intermediate frames to *provide a smooth transition* from one visual image to the next to produce smooth animation).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined Gasper into Stelovsky and Yamada to obtain a smoother motion image by inserting intermediate frames between the key frames by interpolation.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Butterfield (US Pat No. 3,572,915, 3/30/71) – Apparatus for producing forms and colors in motion.

Art Unit: 2176

Tunnell et al. (US Pat No.5,577,185, 11/19/96) – Computerized puzzle gaming method and apparatus.

Bolas et al. (US Pat No.5,513,129, 4/30/96) – Method and system for controlling computer generated virtual environment in response to audio signals.

Baumgartner et al. (US Pat No. 5,642,171, 6/24/97) – Method and apparatus for synchronizing audio and video data streams in a multimedia system.

Chang et al. (US Pat No. 5,734,737, 3/31/98) – Method for segmenting and estimating a moving object motion using hierarchy of motion models.

Fung (US Pat No. 5,949,410, 9/7/99, filed 10/18/96) – Apparatus and method for synchronizing audio and video frames in an MPEG presentation system.

Mirando et al.(US Pat No. 6,238,271 B1, 5/29/01, filed 5/17/99) – Video coloring book.

Eleftheriadis et al. (US Pat No. 6,055,330, 4/25/00, filed 10/9/96) – Method and apparatus for performing digital image and video segmentation and compression using 3-d depth information.

Kurihara et al. (US Pat No. 6,072,478, 6/6/00, filed 2/16/96) – System for and method for producing and displaying images which are viewed from various viewpoints in local spaces.

Hennessy et al. (US Pat No. 6,014,117, 1/11/00, filed 10/23/97, priority 7/3/97) – Ambient vision display apparatus and method.

Lee et al. (US Pat No. 6,052,414, 4/18/00, filed 5/19/97, priority 12/30/94) – Moving picture coding method and apparatus for low bit rate systems using dynamic motion estimation.

Art Unit: 2176

Yahata et al. (US Pat No. 6,087,577, 7/11/00, filed 6/24/98, priority 7/1/97) – Music navigator with visual image presentation of fingering motion.

Cohen (US Pat No. 5,735,726, 4/7/98, filed 12/9/96) – Animated sitting and standing santa character.

Trom et al. (US Pat No. 5,898,429, 4/27/99, filed 4/19/96) – System and method for labeling elements in animated movies using matte data.

Dufaux, (EP 0849950A2, 6/24/98, filed 5/12/97) – Dynamic sprites for encoding video data.

Watanabe et al., (EP 0420657A2, 3/4/91, filed 9/27/90) – Moving object detecting system.

Tarabella et al., *Devices for Interactive Computer Music and Computer Graphics Performances*, Multimedia Signal Processing, 6/97, pages 65-70.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cong-Lac Huynh whose telephone number is 703-305-0432. The examiner can normally be reached on Mon-Fri (8:30-6:00).

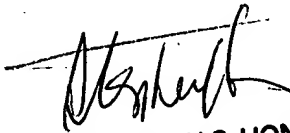
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on 703-308-5186. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 707-746-7238 for After Final communications.

Application/Control Number: 09/197,184
Art Unit: 2176

Page 15

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9000.

clh
December 7, 2001


STEPHEN S. HONG
PRIMARY EXAMINER